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ABSTRACT

This overview of competency based education (CBE) explores some of the important policies and dimensions of CBE that go beyond the popularized notion that simple tests can be devised to make student promotion and graduation decisions or to demonstrate possession of required or desired competencies. Examined are such areas as the reasons CBE has become so popular, the nature of CBE, the focus of CBE, competency standards and minimums, the measurement of competencies, students who fail, school system change and reform, an approach to implementing CBE, and the pitfalls of implementation. The author concludes that CBE and assessment programs are complex processes that are best described as instructional management systems. Further, a CBE program must be viewed as something more than a testing program to make promotion and graduation decisions and must be accompanied by a strong commitment to correct pupil deficiencies when they are discovered. (Author/IRT)

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COMPETENCY BASED EDUCATION
ISSUES AND IMPLICATIONS

(Revised)

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COMPETENCY BASED EDUCATION
ISSUES AND IMPLICATIONS
(Revised)

The high public interest in competency based education and assessment suggests that it may really be an idea whose time has come. The public concern is described in the popular press as a remedy for the alleged shortcomings of the nation's schools. These complaints state that the schools are not as educationally effective as they have been in the past or as they need to be to meet future societal needs. The question arises of why, after years of deference to leadership by educational officials, have citizens seized the initiative to advocate change and reform of educational systems. The *U.S. News and World Report*, September 11, 1978, provides information which supports the case for educational improvement and reform. Examples are: (1) 13 percent of all 17 year olds are functionally illiterate, that is, unable to read a newspaper, fill out a job application, or calculate change at a checkout counter; (2) 30 percent of the 1977-78 Ohio State freshman class was reported to need remedial English and math; (3) student absenteeism nationally has climbed to an average daily rate of 25 percent; and (4) teachers appear to be less dedicated, more permissive, and give fewer writing or homework assignments.

The current taxpayer rebellion is also cited as evidence that citizens are serving notice that they will no longer support declining student achievement, lax standards, and poor performance and suggests the following trends are evidence that changes in the current state of affairs are being made:

- 34 states require competency testing programs
- an old practice, flunking, is being revived
- proficiency goals, quality control, and evaluation of teacher performance are being established
- intense reading instruction is being provided
- social promotions are being slowed, halted, or prohibited
- officials are cracking down on pupil misbehavior

This overview of competency based education attempts to explore some of the important policies and dimensions of CBE which go beyond the popularized notion that simple tests can be devised to make student promotion and graduation decisions or to demonstrate possession of required or desired competencies. Many of the issues relating to competency based education can be drawn out by several straightforward questions:

1. Is competency based education a program or a test?
2. What minimum competencies or standards will be required of pupils?
3. Who will establish the standards and the competencies that will be required?
4. How will such competencies be measured?
5. What will be done to those who fail to achieve them?
6. Will minimum standards be for schools or for programs, for groups of students or for individual students?

The answers to these questions are complex, and decisions made about future actions may set in motion events which will shape educational opportunities to students for years to come.

Why Competency Based Education?

Competency based education has a long history in the educational accountability movement which has been advocated to make officials more responsive to the citizens they represent. The notion that pupil progress should be systematically evaluated is often given as another reason. Advocates of minimum competency based education believe promotion from grade to grade and graduation from high school should be based upon achieving certain standards or attaining certain minimums in order to assure future competency in life. Another purpose frequently given is that officials and the public need to have information to make decisions about future courses of action. Finally, there are advocates who indicate the public revelation of student and school performance based on competency based standards and tests would stimulate reform of school systems.

This array of purposes has generated a broadly based appeal for competency based education and assessment and thus its growing acceptance at federal, state, and local levels of government. Within the past year, the Secretary of the Department of Health, Education, and Welfare allocated funds to examine tests, to provide support to groups advocating setting national standards, and to engage in research into the underlying reasons why some students do not perform well on tests. The 95th Congress has also enacted the Education Amendments of 1978 (P.L. 95-561) which provide a national incentive to states to establish state pupil achievement standards and assess pupil performance in relation to such standards.

The federal government's interest, however, is that of a latecomer to the scene, and state reports indicate that approximately two-thirds of them

have adopted some elements of a competency based education or assessment program.[3] Wisconsin is not among the states that have adopted formal legislative requirements for CBE/T at this time. However, the State Superintendent of Public Instruction has adopted a policy which places the major responsibility to initiate CBE programs upon local school districts with a supporting technical assistance role to the Department of Public Instruction, including the development and availability of banks of objectives and assessment items in the basic subject areas.[4]

No single state law is representative of those of other states. However, the Educational Accountability Act of 1976 in Florida is a noteworthy example which fulfills most of the purposes cited earlier in this paper and also provides an example of legislative commitment to the issue. The Florida law specifies that each student will be guaranteed the attainment of minimum performance and mastery in the basic skills; provides that by July 1, 1976 pupil progression through school must be based on goals and objectives in each school district before being promoted from the third, fifth, eighth, and eleventh grades; and provides that beginning in 1978-79 each school district shall establish standards for graduation from secondary schools. The state educational agency is required to provide a strong monitoring role, including a state assessment program, as well as engage in research into the effects of educational practice which impact upon the attainment of required guarantees and mastery of knowledge and skills.

Nationwide, school districts have independently responded to the call for competency based education and assessment. Examples are Denver, Colorado, and Greensville County, Virginia,[5] which have been cited as having successfully implemented competency based education programs resulting in improved student achievement. A recent survey by the Department of Public Instruction indicates that as many as 22 percent of Wisconsin school districts are implementing competency based education programs.[6]

Information provided to the public from national and state assessment programs whets the public's desire for information from their own school district which can be compared to other state and national information to make judgments about the effectiveness of local programs. The major concerns of citizens and taxpayers appear to be pupil performance levels, high educational costs, and declining student scores. However, the issues may go much deeper and reflect the fact that the school's role in society may be changing. I am convinced that this is likely to be the case and that school systems are changing to accommodate new societal needs. For example,

formal high school education in 1910 affected only about 8.8 percent of the eligible student population compared to 75.7 percent in 1970. Entry to the job market in 1910 was largely dependent upon an individual's ability to perform needed tasks and a very basic level of literacy. By 1930, an eighth grade graduation was held as the minimum needed, and ten years later, in 1940, a high school education was the necessary prerequisite. Today, we are confronted by the proposition that graduation *plus demonstrated competence* must be the hallmark of a high school graduate to assume occupational and civil responsibilities. These data are shown in Table 1.

In the past the majority, and more recently the minority, who did not complete a high school education seemed to experience little difficulty in entering the social and economic mainstream of the nation. Today, however, the minority who fail to graduate from high school are not easily absorbed into the economic mainstream as attested to by youth unemployment statistics. In fact, not to graduate from high school or even graduating without possession of necessary skills is a potential disaster for both the individual and society. Thus, the standard for high school graduation today appears to be the certification of demonstrated competence. While in the past a given level of educational attainment, i.e., eighth grade or high school graduation, was adequate, today the emphasis appears to be on the demonstrated or certified competence that such attainment represents. If in fact the educational system is shifting from a standard of years attended to one of demonstrated, certified competence, substantial change and reform of school systems may be in the air, and CBE may be one of the strategies to accomplish it.

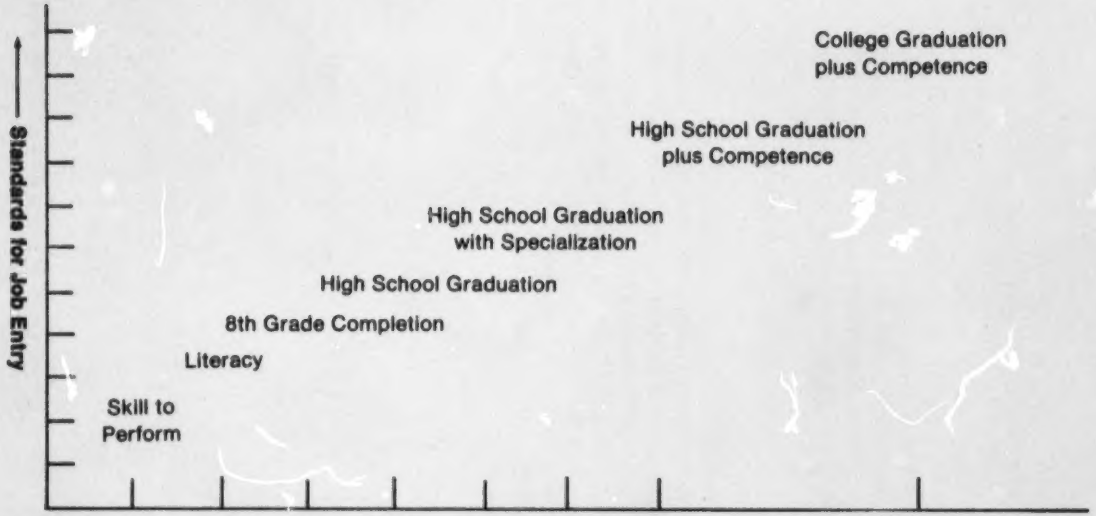
What Is CBE?

Information in the popular press may lead some persons to assume that CBE/T is of recent origin. However, an examination of our educational history reveals that the "roots" of CBE may go back to the eras of scientific management, PPBS, cost-benefit analysis, performance contracting, and criterion-referenced state assessment programs. In fact, much of the current descriptive literature on CBE will reinforce the notion that CBE brings together many of the elements that were found in past programs.

While many persons may believe in and advocate an assessment of competence or educational attainment in the twelfth grade, no single, simplistic pass-fail test in the basic skills will fulfill the expectations for competency based education. Competency based education must be seen for

TABLE 1

Minimum Competency Based Education/Assessment
One Point of View for CBE Interest—
Educational Attainment vs. Achievement



Time	1900	1910	1920	1930	1940	1950	1960	1970		1980
Percent Completing High School		8.8%	16.8%	29.0%	50.8%	59.0%	65.0%	75.7%	75.9% (1972)	74.8% (1973)

what it really is—an educational process which is based on clearly identified or prescribed behaviors and outcomes using designed instructional packages directed to these outcomes; embraces variable approaches and flexible timeframes; emphasizes problem-solving approaches which make measurement and assessment the handmaiden of instruction; certifies possession of standards based competence for promotion and graduation; provides remediation for those who fail; and provides data and information by which officials make systems changes and reforms with the potential to increase student and school performance. This concept of CBE identifies it for what it must be—an instructional management system!

What Is The Focus Of CBE?

The content of CBE programs is open to high expectations and wide interpretations. Some persons quickly respond by saying it is competence in basic, fundamental, or life skills, or in other words, educational fundamentals. If one accepts the proposition that the basic skills (reading, writing, and mathematics) are what CBE programs should be all about, then the related concern arises as to the context in which they will be taught and assessed. Traditionally, they have been taught in the context of academic subjects involving cognitive knowledge. However, citizens appear to be concerned about other kinds of contexts, because it is alleged that students are not able to function effectively in the marketplace as consumers. If decisions are made to emphasize traditional academics, decisions may follow that students would not be allowed to graduate or be promoted unless they met the minimums in each separate academic subject. The odds are that this would result in students who would be competent in traditional reading, writing, and arithmetic subjects. However, they might not be able to apply or translate this knowledge into relationships or understandings which are operational in the consumer world. On the other hand, if instructional context is representative of the consumer world, students might not attain traditional standards of academic competence. This raises the issue as to the standard (work-a-day world or academics) on which instruction and promotion or graduation will be based. It can be readily seen that such decisions, in addition to instructional content, also include choices about values which are likely to result in predictable consequences and with which one must be prepared to live.

Competency Standards and Minimums

Policies and decisions to establish standards and minimums for competency based programs are very important. If mastery of basic skills is the

focus of a CBE program, will standards set by teachers and school specialists be appropriate? Many persons would subscribe to the statement of a former Secretary of Health, Education, and Welfare that the schools are too important to be left to academicians alone! Since citizen advocacy has generated much of the current interest in CBE, it seems obvious that they want to be brought into the decision-making processes. Educational authorities must be prepared to share power and decisions with citizens when establishing performance standards and minimums that students must demonstrate before being promoted or awarded a diploma. Standards for acceptable performance can be established from the performance of students or adults. Objections will probably be raised to the latter procedure on the grounds that such standards may be too high—or too low. Standards may also be established from some arbitrary performance level which may represent an idealized goal to be attained. Experience to date has shown that arbitrary standards are likely to be unrealistically high and result in large numbers of students who fail to attain the expected level.

Thus, the nature of the standards that are established will represent the values and expectations of the persons or groups who establish them. There is also the ever present danger that minimums may become maximums and that minimums tend to lower, rather than raise, expectations and performance. Conflict and controversy will accompany any process to establish standards and minimum competencies. However, the involvement of the public will assure that knowledge and skills required of students have practical, real-life relevance.

Measurement of Competencies

The measurement of student performance is a complex process and will generate thought-provoking and controversial discussion. Who will be responsible to measure and certify competence? There are advocates who believe the federal government should be the court of last resort in measurement and testing. Others believe that since education is a state function, the state should be responsible for measuring, assessing, and certifying possession of competencies. Others will point out that the local school district is responsbile for instruction and curriculum, and it clearly should be the level responsible for assessing instructional outcomes. Practical realities probably will dictate that all three levels will be involved, especially if comparative data between districts and states are desired.

The assessment of instructional outcomes also brings up an important consideration as to whether the data obtained should be used to diagnose pupil performance or for the evaluation of program effectiveness. If the decision favors assessment of pupil performance, subsequent choices must be made between using life experience, simulations, or paper and pencil tests to assess the degree to which students can perform in situations such as those they may find later in life. Assessing student performance after graduation from high school does not provide a basis for remediating failures, thus making a case for simulation in lieu of actual life performance. However, simulation of life situations is likely to be complex and expensive, and many will easily conclude that paper and pencil tests are the only reasonable alternative. These tests carry a relatively narrow band of knowledge and involve skills that may be remote from actual performance in life and not always predictive of success. Also, there is always the possibility that a student can fail the paper and pencil situation but successfully meet life situations.

Some CBE proponents argue that the complexity of the measurement issues are overstated in order to avoid addressing the issue and that only one test in the twelfth grade for graduation eligibility needs to be given. However, those who have relied solely on a twelfth-grade test to make graduation decisions have not always been pleased with the results. If CBE is a managed instructional process directed at specific outcomes, it is also reasonable to assume that behaviors and outcomes need to be sequentially measured throughout the years the child is in school in order to provide appropriate instruction. Only when measurement is diagnostic and progressive can the results be used to guide children through the instructional programs with any assurance that predetermined outcomes wil be attained.

Testing and assessment are integral parts of CBE programs. Different kinds of tests give different kinds of results, and one must choose carefully on the basis of what is to be tested and how the results are to be used.

Students Who Fail

One of the hallmarks of competency based education programs is to certify possession of certain minimum competencies before students are promoted or graduated. Any system of instruction will result in a range of student performances, and some will fall below the minimums established.

Legally and morally, school authorities have an obligation to provide students who have failed to achieve minimum competencies with additional instructional opportunities to acquire the required skills.[7]

The use of standards for promotion or graduation brings up the issue of minimums and optimums. Should one standard be set for all students, or should each individual student's abilities, special talents, family background, or other factors which affect learning be considdered? Should multiple standards instead of single standards be established? For example, a single standard may be too inflexible and difficult to motivate and meet the needs of all students. The counter response is to provide a sliding scale or multiple standards that would provide a higher standard for brighter students than for the less bright. Such a policy would probably be attacked quickly onn the grounds that it is intelligence, not competence, that is being measured.

However, aside from the dilemma of minimums and maximums, students must be provided with remedial programs and additional opportunities to demonstrate acquisition of required competencies. CBE programs must include more than one instructional package or opportunity. Instruction must accommodate different learning styles as well as remedial opportunities for those who do not succeed the first time. The development of validated instructional packages will incur inescapable costs, and remedial instruction must accommodate this eventuality.

School Systems Change and Reform

While this discussion has been directed primarily to the impact on students, another use of CBE needs to be considered, that being, its use to evaluate program and school performance. Schools, not pupils, become the objects for concern, and it is logical that they can be successful or unsuccessful in providing effective instruction to meet student needs. Should citizens settle for a school or a program that successfully reaches 80 percent and fails 20 percent? What will be done with programs that are judged to be failures? Will they be given several more chances to succeed? Will information be presented to the public to make schools look like they are succeeding when they are not succeeding? These are serious questions, and the information from assessment and evaluation of CBE programs can be used as feedback to school officials to modify the curriculum, institute innovations and reform, and redesign instructional systems.

Educational systems should have built-in mechanisms for adaptation and change. It would seem to be a reasonable expectation that curriculum, instruction, and methodological delivery systems be continously evaluated in order to provide cost-effective education. The application of CBE-type standards and assessment to schools and programs places responsibility and accountability for results upon persons other than students and may not be viewed enthusiastically by proponents!

An Approach to CBE

Does competency based education work? There are numerous schools and school districts that will answer with at least a qualified yes—if things are carefully planned and implemented. For example, Greensville County, Virginia, reported that upon initiating competency based education in 1974 the nonpromotions dropped from 800 in 1974 to 276 in 1976. At the same time, student performance in grades one to seven on national achievement tests went from the 30th percentile to the 50th percentile, and dropouts decreased from 132 to 82.

There is mounting evidence from Wisconsin school districts that CBE programming provides an avenue for excellent inservice training and staff development in addition to improving instruction and student academic performance. Reportedly, CBE is equally as applicable to individual courses as to multi-year programs.

Any successful implementation of competency based education must be preceded by careful planning to develop the essential understandings needed for subsequent development. The experience of CBE adoptors indicates that the initial planning phases will usually surface any existing controversy and conflict about problems in the schools. Involving teaching staff, community citizens, and even students has been valuable in reducing the number of surprises that come up later. Systemwide participation from the outset also tends to develop a sense of joint responsibility for what will take place and a commitment to bring it about.

After the initial understandings have been reached as to the nature of competency based education programs, the first step is to identify and define problems which need to be resolved. The culmination of this activity will result in a written consensus statement of the problem (s) and the outcome (s) needed or desired to resolve it.

Analysis and study, as the second step, lead to the determination of whether CBE is the most feasible solution for the problem. This serves to retest CBE concepts in light of situational specifics, not the generalities, of what is remiss in the school system. Feasibility analysis takes what is known about a given problem and selects the best cost-effective method to resolve it. Once the decision has been made that CBE is the best means, responsibility must be assigned to coordinate the work of numerous committees which must be activated to accomplish specific tasks.

Step three activities result in agreement on the specific written goals and objectives which are to be accomplished, the specific outcomes to be attained by each objective at specific points in time by students, and the selection of specific content areas which will be used for the development of instructional packages. The products at the completion of this step provide the basis for developing the assessment items that can be used to monitor student progress.

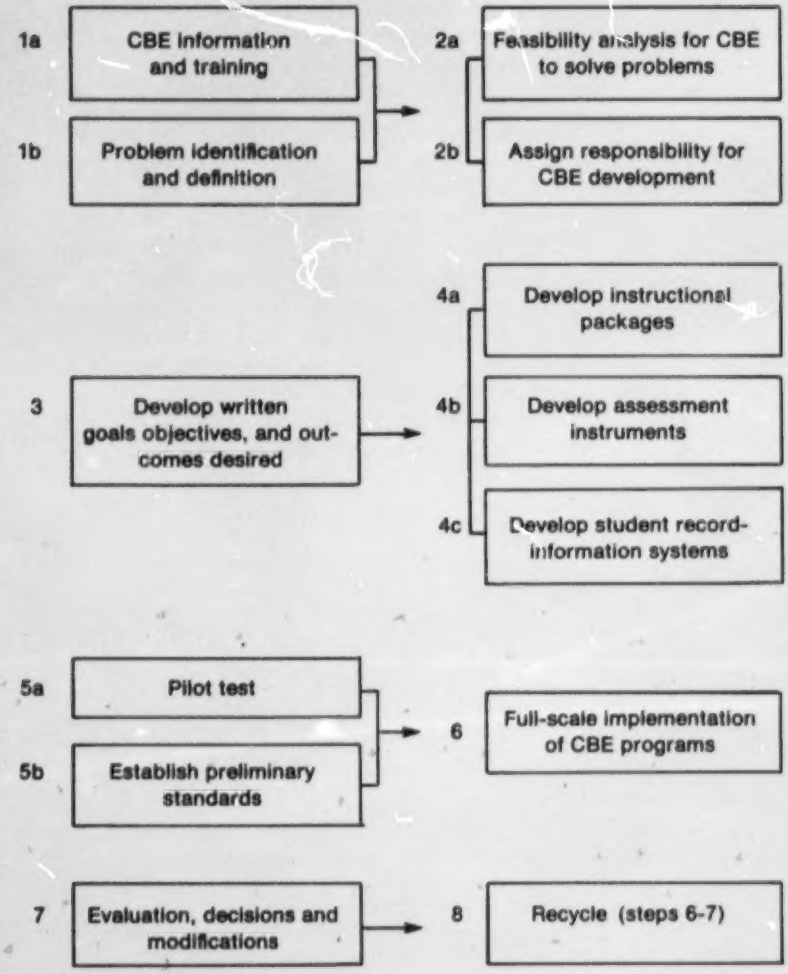
Step four consists of three interdependent sets of activities. One is the development of the instructional packages for the specific outcomes to be acquired by students. The second activity is the development of valid assessment instruments which will be used to measure whether desired outcomes have been attained by students. The third activity will be development of a record system to record pupil progress. This information subsystem is important, since it provides the data teachers will need to guide students through the instructional sequences to attain the prescribed competencies.

The fifth step involves piloting the instructional packages, the assessment instruments, and the pupil record system to determine whether the components work together effectively. This phase is designed to reveal inadequacies in the program which need modification and to fine-tune the various components of the system. It also provides some of the basic data which can be used for setting initial student minimum competency standards. It is important that these initial standards be reasonable and not create a public expectation which cannot be attained.

Completion of the pilot testing, establishment of tentative standards, and revision of the preliminary instructional and assessment packages are the prelude to the full operational test of the system in step six. This stage will

Table 2

CBE Development Logistics



probably be several years after the decision to adopt CBE. It is also important to emphasize that the first implementation cycles require careful monitoring and technical assistance to maintain the preplanned system parameters and assure flexibility to make changes to meet unforeseen contingencies.

Step seven is the analytic and evaluative process used to determine the degree to which the system has fulfilled the expectations. Performance is compared to expectations; decisions are made in respect to promotion, graduation, and remediation; reports are provided to the public; and necessary modifications are made for the next cycle of instruction.

These implementation steps are illustrated in Table 2.

Implementation Pitfalls

Competency based education programs have been tailored to meet the unique needs or problems of individual communities. In Wisconsin, this ranges from minimum competencies in reading and mathematics to systemwide competencies in conventional subject matter areas. Responsibility for developing and implementing CBE programs ranges from administrator-directed to faculty-directed and from school-centered to community-centered. There is, however, a growing consensus about emerging "do's and don'ts" which CBE adoptors would probably agree with, including:

1. Don't use CBE as a cover for "back to basics," "discipline and order," "cutting educational costs," or as a vehicle to punish nonachievers.
2. Don't leave parents, public citizens, the board of education, teachers, and students out of CBE development and operation.
3. Don't start everywhere at once; identify your problems and needs and establish priorities.
4. Don't underestimate the fact that years of planning and implementation are required to implement CBE effectively.
5. Don't underestimate the complexity of CBE programming and its potential for surfacing controversy and conflict.
6. Don't fail to get the board of education's commitment for time and financial resources necessary to carry out programs.
7. Don't sneak up on students with only a testing program, especially a twelfth-grade minimum competency test to establish a pass-fail standard for graduation.

8. Don't establish policies for promotion and graduation before you develop, pilot, and evaluate CBE programs.
9. Don't rely on single instructional packages to provide opportunities for students to acquire prescribed competencies.
10. Don't hide CBE policies, standards, minimum competencies, and assessment results from the public.
11. Don't necessarily decide to develop CBE programs alone.
12. Don't reduce instructional opportunities and services to children to implement CBE programs.
13. Don't attempt to equalize student performance to one promotion or graduation standard.
14. Don't underestimate the need for professional staff commitment for successful implementation of CBE programs.
15. Don't neglect to provide for remediation of students who fail to acquire prescribed competencies.
16. Don't overlook rights to due process by parents and pupils.
17. Don't overlook the fact that CBE is a continuous instructional management process.
18. Don't underestimate the costs of instruction, testing, and recordkeeping required to make CBE effective.

Summary

Competency based education and assessment programs are complex processes which are best described as an instructional management system. Programs should be developed and implemented with full involvement of the community as well as the professional staff of the school district. The decision to institute CBE programs must have a corresponding commitment to provide the kind of assurances, guarantees, finances, resources, and timeframes which such systems must have in order to be successful. Above all, competency based education must be viewed as something more than a testing program to make promotion or graduation decisions and must be accompanied by a strong commitment to correct pupil deficiencies when they are discovered.

Footnotes

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5. "Goodbye to the Rubber Diploma," *Time* 110 (September 26, 1977) pp. 46-47.

6. Department of Public Instruction, unpublished survey of Wisconsin School District Administrators (Madison, Wisconsin, April 1978).

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